Good Looks That Last
AN ISO CERTIFIED COMPANY

SURFACE PREPARATION

Paint failure, in most cases results from poor surface preparation and some of the important elements of this procedure is offered to be used as a reference to assist the reader in avoiding costly painting problems, premature paint failures and provide solution to annoying problems.

CONCRETE CONSTRUCTION

New Surfaces:

Poured concrete or precast concrete surfaces should cure for 50 – 60 days. Plastered walls should cure for 20-30 days depending on prevailing weather conditions.

Before painting new concrete surfaces, the presence of form release agents must be considered. If form oils or waxes are present, sandblasting or washing with a detergent solution must be done to assure good adhesion.

Poured concrete floors must be etched with a 20% solution of muriatic acid in water to dissolve the milky film formed on over troweled cement surfaces and open the pores to allow for penetration and to promote adhesion of the paint.

Plastered surface usually contain voids and honeycomb pockets near the surface. The surface should be thoroughly cleaned with a stiff brush to remove loose sand granules. The first or primer coat should be thinned down and applied by brush to ensure that there is good penetration of the paint. Failure to do this can result in a flaking paint problem.

Old or Previously Painted Surfaces:

The most common exterior paint failures in the tropics on masonry surfaces are cracking and flaking and discoloration from fungus/mildew.

Cracking & Flaking:

This is mainly caused from painting over heavy chalk deposits that have not been properly removed. Chalk deposits are formed on old exposed painted surfaces when the coating system has started to disintegrate.

The most efficient way to remove this loose, friable substance is with high-pressure spray equipment. Multiple coats of paint must be completely removed, thereby exposing a sound substrate before attempting to repaint. It is recommended that the prepared surface be sealed with Sissons Penetrating Liquid or Sissons Weather Guard, thinned 2:1 with clean water as a first coat.

Mildew/Fungus Infested areas:

This is a major cause of paint discoloration and disfigurement of exterior building in the tropics. Surfaces must be sterilized before painting. External concrete or plastered surfaces left untreated for several months may become infected with fungal spores and may require washing with a Sissons biocidal solution before painting. Old paint work which shows signs of disintegration must be pressure washed to a sound substrate. Paint in good condition but discolored by fungus must be soaked with the biocidal solution and scrubbed. If complete removal is not achieved, then the procedure must be repeated.

EFFLORESCENCE

This is a white crystalline deposit on the face of a wall and also often seen on newly laid bricks/tiles. It is caused by the presence of moisture bringing soluble salts to the surface and eventually drying, leaving a white deposit. Removal is done by wiping or washing off with a 10% muriatic and acid solution, followed by flushing with clean water, to remove the acid. If the problem is persistent then a major build-up of salts may occur, pushing the paint film to form unsightly craters/blisters. The solution to this is to locate and correct the source of the moisture conditions causing the problem. In some cases, especially on old buildings where damp-proofing was never done, the problem may only be solved by major re-construction work.

WOODEN SURFACES

New Wood:

Sand to a smooth finish and dust off. Apply two (2) coats of Sissons Sanding Sealer over knots or heavy resinous area. e.g. the very dark oily areas on some pieces of pitch pine. Finish using one coat Sissons Universal Undercoat and two (2) coats of paint, allowing adequate drying time between coats and sanding lightly after each coat. An ideal paint for interior or exterior work is the SISSONS Super Gloss Paint in which case a primer is not required as the paint has a built-in primer.

Old Painted Wooden Surfaces:

Old paint showing blistering or flaking should be cleaned by scraping and sanding to a sound substrate. Exposed wood should be spot primed using SISSONS Super Gloss paint before finishing with one or two coats of Super Gloss Paint.

Paint in good condition i.e. not cracking or peeling but showing chalkiness must be washed thoroughly, fungus infested areas must be sterilized, and glossy areas must be sanded to 'break' the gloss and hence promote good adhesion.

Unexposed areas such as eaves, ceiling etc. apply Sissons Biocidal Solution. Varnished surfaces if not cleaned occasionally may 'go black' and may cause the wood itself to darken resulting in an unattractive surface.

PREPARING METAL SURFACES

Proper surface preparation considerably enhances a coating's performance, so it is essential that the surface be prepared in the best possible manner. The type of preparation chosen would depend on cost, accessibility, contamination of manufacturing
process, etc.

The following procedures are summaries of the Steel Structures Painting Council (SSPC). The Swedish Standard is also given where applicable.

SOLVENT CLEANING: SSPC - SPI - 63	Solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods are used to remove oil, grease, dirt, drawing compounds and other similar foreign matter from surfaces prior to painting. Certain corrosive salts, such as chlorides and sulfates must be removed with water before cleaning the surface with hydro-carbon type solvents. When rags or waste are used with solvents for cleaning they should be replaced frequently with clean ones, as they absorb grease and then act as a transportation agent for the grease or other contaminants. Use plenty of clean rags, and as an added safety measure, rinse the surface with clean saturated rags. **Gasoline** and **Benzene** should never be use. Solvent cleaning should be undertaken only with adequate ventilation. Caution should always be observed for danger or solvent inhalation or fire.
HAND TOOL CLEANING: SSPC - SP2-63 Swedish Standard St. 2	This method is generally confined to the use of scrapers, sandpaper, wire-brushing or hand impact tools to remove loose mill scale, non-adherent rust, and scaling paint or other foreign matter. Hand tool cleaning is normally used in areas not subject to corrosive environment or on surfaces not intended for top coating with poor wetting systems such as those based on Vinyl Chloride. Special attention should be given to weld seams or spots. Always remove weld flux and spatter as it may initiate localized paint failure which can expand to cover larger areas.
POWER TOOL CLEANING: SSPC-SP-3-63 Swedish Standard St. 3	This method employs the use of power wire brushes, impact tools, grinders and power sanders to remove loose mill scale, loose rust, paint or other foreign matter. Power tool cleaning should be employed by experienced personnel. Burnished mill scale can sometimes be mistaken for bright metal. Primers applied to burnished metals will not adhere properly.
FLAME CLEANING OF NEW STEEL: SSPC - SP – 4 - 63	One traverse of the flame cleaning head, followed by wire brushing, is normally sufficient to remove new or old steel that has been partially weathered. Badly rusted or heavily scaled steel should be treated as previously painted or “old work”. At best, flame cleaning will give results somewhere between that obtained by power tool and commercial blast cleaning. The individual job determines the type of gas and speed of traverse required for acceptable cleaning

BRUSH-OFF BLAST CLEANING: SSPC – SP – 7 – 63 SA1	This is a relatively low-cost method of cleaning and is often used at the job site to clean materials that are shop and field coated before installation. This type of cleaning is not generally recommended to severe environments. It is often used to remove temporary coatings applied for the protection of equipment in transit or on storage. It is also used to remove old finishes in bad condition. A brush-off blast clean surface is defined by the SSPC as one from which all oil, grease, dirt, rust-scale, loose mill scale, loose rust and loose paint or coatings are removed completely. However, tight mill scale and tightly adhered rust, paint and coatings are permitted to remain – provided that all mill scale and rust have been exposed to the abrasive blast pattern sufficiently to exposed numerous flocks of the underlying metal uniformly distributed over the entire surface. This method can be effectively used to clean rusty galvanized surfaces and to remove old finishes in poor condition.
COMMERCIAL BLAST CLEANING: SSPC – SP – 6 - 63	This type of blast cleaning is generally considered adequate for most surfaces requiring a good clean surface for painting. The advantage of commercial blast cleaning lies in the lower cost of satisfactory preparation for most service conditions. Blast cleansed surfaces should be primed as soon as possible. A commercial blast cleaned surface finish is defined as one in which all oil, grease, dirt, rust scale and foreign matter have been completely removed from the surface and all rust mill scale and old paint have been completely removed except for slight shadows, streaks, or discolorations caused by rust stain mill scale, oxides or slight, tight residues of paint or coating that may remain; if the surface is pitted, slight residues or rust or paint, may be found in the bottom of pits, at least two-thirds of each square inch of surface area shall be free of all visible residues. The remainder shall be limited to the light discoloration, slight staining or light residues mentioned above.
PICKLING: SSPC- SP- 8 - 63	Pickling is a method of preparing metal surfaces for painting by completely removing all mill scale, rust, and rust scale by chemical reaction, or by electrolysis, or by both. It is intended that the pickled surface shall be completely free of unreacted or harmful acid or alkali, or smut.
NEAR WHITE BLAST CLEANING: SSPC- SP- 10 - 63T Swedish Standard SA 2.5	A near-white blast cleaned surface is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matter have been completely removed from the surface, except for very light shadows, very slight discoloration caused by rust stain, mill scale, oxides or slight, tight residues of paint that may remain. At least 95% of each square inch of area shall be free of all visible residue and the remainder limited to the light discoloration mentioned above. Priming of cleaned surfaces must be done as soon as possible, particularly in humid or corrosive environments.

WHITE METAL BLAST: SSPC- SP- 5- 63 Swedish Standard SA3	This system of cleaning is mandatory for preparing the interior of tanks prior to the application of a lining. The cost is comparatively high, and it is generally used for work only when such costs are warranted. In some cases, accessibility after erection is not possible, therefore, under such conditions the use of blasting to white metal before erection is considered economical. This system provides the maximum surface preparation and should result in the best performance possible from the painting system chosen. Surface preparation of this magnitude is often done in the field after the equipment or structure is in place. The use of white metal blast cleaning without rust-back in areas of high humidity necessitates the choice of blasting time so that no rust-back can occur, and when painting can be completed at least the same day. A white metal blast cleaned surface finish is defined by the SSPC as a surface with a grey-white, uniform metallic colour, slightly roughened to form a suitable anchor pattern for coatings. When viewed without magnification, the surface should be free of all oil, grease, dirt, visible mill scale, rust, corrosion products, oxides, paint or any other foreign matter.
GALVANIZED METAL:	Standard paint systems such as oil or alkyd-based house paint or rust inhibitive primers should not be applied directly on new galvanized metal. Applying these coatings directly to new untreated galvanized metal may create a reaction between the zinc and coating, causing loss of adhesion. New galvanized metal exposed to a mild interior or exterior environment may be successfully coated by first thoroughly cleaning the surface with rags saturated with mineral spirits, then priming with SISSONS One Pack Etch Primer. An etch primer should be recoated within 2 – 4 hours and not allowed to stand overnight, to avoid moisture condensing on the primer. For superior protection a metal primer is recommended followed by conventional solvent or water-based system. The choice of product and colour is dependent on the type of exposure. Weathered galvanized surfaces covered with “white rust” must be thoroughly cleaned by wire brushing or sanding. A quick and highly effective method of cleaning is the use of high pressure spray equipment, which can also remove other accumulated deposits. If the surface is heavily rusted, it can be effectively prepared by Brush-Off Blast Cleaning.

ALUMINIUM	Bare aluminum surfaces exposed to normal environment will eventually develop a dull, darkened appearance. In a heavy industrial or salt air environment, extensive pitting and surface corrosion will develop. Non-corroded surfaces should be abraded by rubbing with fine steel wool, then aggressively wiped with rags saturated with mineral spirits to remove deposits of dirt, grease and steel wool dust. Pitted and corroded surfaces should be sanded, then wiped clean with a cloth dampened with mineral spirits.

GYPSUM SURFACES

RECOMMENDATION FOR GYPSUM SURFACES

1. Dust surface to remove loose/powdery materials.
2. Apply Gypsum Paste (Mud) with a broad scraper, trowel or ceiling float over surface. Avoid heavy build up, as most of the dried paste would be sanded off.
3. Allow complete drying. Overnight is recommended.
4. Sand flush using a medium grade sand paper. A final sanding with fine grade paper may be necessary. A uniform smooth surface should be achieved.
5. Where imperfections are still visible, redo these with small “dabs” of paste and repeat steps 3 and 4.
6. Apply one (1) coat of Sissons Penetrating Liquid, Sissons Undercoat or Sissons Gypsum Primer/Sealer and allow 2 – 4 hours drying before painting.

WARNING:

Gypsum Paste is applied only to fill imperfections and to give a smooth flush, pattern free substrate. It does not contribute to the strength/integrity of the surface hence the minimum film builds possible to fill the surface should be applied. The purpose of the Penetrating Liquid or the Universal Undercoat is to provide a uniform base for painting.

PAINT FAULTS, IDENTIFICATION AND REMEDY

General

The main purpose of a paint coat is to protect the surface against the environment and to give a pleasant appearance. A properly applied coating and one designed for the particular surface will perform as expected.

There can be problems however not only in the can of paint but also on the painted surface. The paint used is usually first suspected for paint failure but in most cases the fault lies somewhere else since stringent quality control is exercised and the possibility of a defective batch of paint coming onto the market is very small.

Paint faults could derive from one or more of the following:

(i) Incorrect storage of paint.
(ii) Selection of an unsuitable type of paint or the wrong paint system
(iii) Inadequate surface preparation.
(iv) Other factors e.g. weather conditions, incorrect thinning, application etc.

The following chart is designed to identify faults in paints in the can and on the painted surface and the causes and recommendations for elimination. These are the most general faults encountered however any related items not covered in this section can be referred to Sissons Technical Service Department Phone (868) 643-2425 ext. 245.

PAINT FAULTS, IDENTIFICATION AND REMEDY

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
ALLIGATORING/ CROCODILING	Breaks or cracks in a paint film which do not extend to the base coat or substrate – Resembles hide of alligator.	Uneven stress in paint system e.g. finishing coat not suitable to Primer.	Use system recommended by paint manufacturer. Where problem has occurred strip to substrate and treat as for new surface.
BITTINESS/ UNEVEN FINISH	Small bits like sand grains appear on paint film which should otherwise be smooth.	Painting in dusty environment. Paint used may be contaminated or 'bitty –paint not properly mixed. Formation of dry spray settling on wet paint. Surface itself may be dusty.	Clean surface free of dust etc. and ensure that conditions are suited for paint to be used, Use correct techniques. Sand affected areas free of bits, dust off before repainting. Improve conditions/techniques.

Good Looks That Last
AN ISO CERTIFIED COMPANY

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
BLEEDING	Paint film becomes stained and multi-coloured impression of knots are seen on painted wood.	Soluble coloring agents has diffused from Primer to top-coat. Knots on new wood not adequately 'sealed'. Painting over bituminous surfaces.	Choose a finishing paint suited to Primer or use a sealer/barrier coat.
BLISTERING / BUBBLING	Small hollow projections in paint/varnish film	Gases of liquids are trapped beneath the paint film which is impervious. Wrong Thinners used. Too thick a paint film.	Ensure surface is free from moisture or if not possible use a paint that is not impervious. Affected film can be treated by drying surface followed by scraping or sanding of blisters and repainting.
CHECKING/ CRACKING	Fine 'hair-line' cracks on the surface. Cracking is fine cracks that go to the substrate.	As under ALLIGATORING	As under ALLIGATORING
CHALKING	Paint surface and Pigments wear away, becomes detached and disappear from the surface. Fading of colors, dulling of gloss.	On exposure to Ultra Violet light all systems tend to chalk as the binding the pigments gradually.	Use paint system recommended for exterior use. Wash off all loose powdery material. If severe, pressure washing may be advisable. Allow to dry then seal with one coat Sissons Penetrating Liquid, then finish with a paint suitable for exterior use. Paints can be formulated to control the degree of chalking.
CURTAINING SAGGING	Runs or blobs of paint drying on vertical surface. Appears uneven and unattractive.	Too thick a coat of paint is applied and the paint 'runs' down before it has set. Excessive use of thinners or wrong thinners.	Following instructions by paint manufacturer. Scrape off affected areas, sand to a sound surface and repaint.

Good Looks That Last
AN ISO CERTIFIED COMPANY

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
CHIPPING/ FLAKIING/ SCALING / PEELING	Paint film or parts of it become detached from the substrate or underlying coat. Paint film comes off in small pieces or large sheets (flakes)	Applications on a damp greasy surface incorrect application conditions. Incorrect thinning or poorly mixed paint. Application on mill-scale or rust. Incorrect timing between coats of paint. Finish not compatible with Primer.	Pretreatment and degreasing according to instructions. Follow surface preparation directions by manufacturers. Scrape and wire-brush to a sound surface and recoat using a recommended system
COLOUR CHANGE	Colour becomes lighter, darker or changes in some way.	Painting over fresh concrete, lime burning, chalking. Colour not light fast resulting in fading.	Select paint system and colours which withstand the stresses of the environment. If surface is powdery wash to a sound base, repaint using a recommended color or system.
DRYNIG SLOW OR NON-DRYING	Paint film remains tacky for a long period.	Wrong thinners used. Paint film too thick. Rainy conditions at nights or enclosed air condition rooms. Painting over oily surface e.g. new teak surface. Paint is very old and the driers are no longer ‘active’. Painting over ‘green’ concrete e.g. floors.	Follow instructions given on product label. If paint is slow drying, it would eventually dry but may take several days. If non-drying, remove using a strong solvent, allow surface to dry-off and repaint using recommended paint.
EFFLORESCENCE	White crystals, very much like salt appears on bricks. Cement or concrete surfaces whether painted or unpainted.	Moisture bringing soluble salts to the surface; on evaporation crystals are deposited on the surface if the paint is porous or beneath the paint film, which will cause the paint to lift.	Ensure that surface is dry before painting. If building is old and dampness is a problem, then a porous coating is advisable. Brush off salt deposit. If paint has lifted scrape off, dust to a sound surface and allow to stand for 5 – 7 days. If no efflorescence re-occurs then repaint. If salts reappear then find source of moisture and repair. A builder’s advice may be necessary.
FISH EYE	Small circular spots on a painted surface. The paint has moved away to show the bare substrate or the underlying coat.	Contamination such as tiny blobs or oil, iron filing or moisture.	The source or contamination must be found and eliminated. Sand surface and repaint. In some finishes a “fish eye” additive can be used to prevent the appearance of this defect.

SISSONS Paint
Good Looks That Last
AN ISO CERTIFIED COMPANY

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
FUNGUS / ALGAE	Grey/black growth on exterior surfaces. Close examination may reveal a thread-like growth or in same cases a black grainy look. Fungus, mildew and mould are all terms used to describe this form of plant that disfigures a surface. Dirt can sometimes be mistaken for fungus. Reddish—brown growth on some concrete surfaces is also a form of fungus.	In the tropics the presence of moisture, heat and dust/dirt are ideal ingredients for fungus growth.	Use a paint recommended for fungus resistance. Keep surfaces clean e.g. eaves which are varnished. Initially discoloration is due to dirt collection however if left for a prolonged period, fungal spores begin to grow on the dirt and then finally on the coating eventually discolouring the substrate. Infected surface must be sterilized with Sissons Biocidal Solution. First wash or scrub surface with a detergent. DO NOT USE BLEACH Rinse the surface thoroughly to remove any fungus or algae. Allow to dry thoroughly. Apply Sissons Biocidal Solution to affected areas. Allow to react for at least 30 mins,. Repaint surface shortly after treatment has dried.
LIME BURNING (ALKALI ATTACK)	Light coloured patches appear in coloured paints, especially on newly plastered concrete. Common on beams and base walls.	Coloured pigments are decomposed by alkali in new concrete/plaster.	Allow surface to dry thoroughly. If cracks are present, repair. Wipe discoloured areas with a damp cloth and repaint. If moisture is a recurring problem then lime-burning may re-appear.
ORANGE PEEL	Pock - marked appearance as if the paint has not flowed out.	Incorrect pressure during spray application. Wrong type of thinners poor spraying techniques.	Look at spray technique, thinners etc. To remove sand off and repaint, adopting new technique.

Good Looks That Last
AN ISO CERTIFIED COMPANY

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
PINHOLING, SOLVENT BOILING	Minute holes or ruptures in a paint film.	Air or gas bubbles trapped in the wet film burst and form small craters, which remain as flaws on the dried paint. In stoving enamels-solvents may be trapped in areas where a heavy coat of paint is applied and the paint may set with numerous tiny craters – this is referred to as solvent boiling.	Ensure surface is dry and solvent used are those recommended by paint manufacturers. Adopt good painting practice. Do not apply a heavy coat of paint. To remove sand to smooth surface and repaint.
PITTING	Small holes or 'pits' in a metal surface. Rust spots appearing on a painted or unpainted metal surface.	On a painted surface improper surface preparation or absence of anti-corrosive primer may result in pitting.	Follow manufacturer's direction for surface preparation. Bare metal must be protected against corrosion. On a painted surface, if pitting is not widespread, wirebrush affected areas spot prime with Sissons Zinc Chromate Primer and recoat with one of Sissons Alkyd enamels e.g. Super Gloss or Industrial Enamel. If pitting is very bad, complete removal of rust/old paint may be necessary before recoating.
RUSTING	Reddish or brown stains appearing on painted or unpainted metal. If severe may rupture the paint and lead to flaking.	Metal left untreated. Inadequate surface preparation or absence of an anti-corrosive primer.	For rusting/corrosion to take place both moisture and air must be present. Metal left unprotected would rust. Follow manufacturers direction for surface preparation and type of finish to be used. If rusting is in spots, scrape/wire brush affected areas, spot prime using a Sissons Metal Primer and finish with either Super Gloss or Industrial Enamel. For specialized protective coating e.g. offshore structures etc. refer to Sissons Technical Service Dept.

Good Looks That Last
AN ISO CERTIFIED COMPANY

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
SAPONIFICATION	An oil paint may appear dry then becomes tacky and discoloured.	Application of oil paint over 'green' or fresh concrete without sealing or adequate drying.	Allow surface to dry thoroughly. If an oil paint is being used Sissons Alkali Resisting Primer is recommended as a first coat. Where saponification has occurred, scrape off tacky material, then wash off using soap and water, solvent wipe then allow to dry thoroughly or alternatively use Sissons Alkali Resisting Primer. Then finish with Sissons Super Gloss or alternative.
SETTLING (IN CANS)	Pigments are fine particles, these settle on storage at the bottom of can. This may be hard and difficult to stir in or soft and easily re-incorporated.	Paint is very old and stored in a warm place. Inadequate milling at factory or formula has heavy pigments and not adequate suspending agents	Mix thoroughly before use. If settlement is very hard and forms a 'cake' then do not use paint.
SHEARINESS (UNEVEN GLOSS)	Dull areas or stripes on a semigloss or gloss surface. There are patches that appear 'flat'.	Paint or varnish not properly stirred. A Semi-Gloss Varnish may appear high in gloss in some parts and flat in others. Substrate that are uneven has higher absorption in some areas. Uneven paint application or wrong thinners.	Use only recommended thinners. Apply an even coat of paint. Patch porous or filled places before priming. Stir paint well.
'SKINNING' ON STORAGE	A scab or dried film of paint appears in can. This may be hard and covers the entire top of the paint or small pieces.	Paint container was not air-tight. Storage temperature too high. Paint low in can. Not enough anti-skin agent used in paint.	Ensure paint can is tightly closed. If paint can is not full, pour some thinners on surface to act as a seal, or close can tightly and shake vigorously to 'dissolve' air in space of can before storing. If skin is present in unused paint – strain before use.

PAINT FAULTS, IDENTIFICATION AND REMEDY CONTINUED

PAINT FAULT	IDENTIFICATION	CAUSES	PREVENTATION/REMEDY
WATER – STAINING	Brown patches darker than original paint on hardboard, celotex, etc.	Leak through roof bringing soluble matter from board etc discoloring paint.	Repair leaks. If ceiling board has swollen and started to disintegrate then those sections must be changed. If stained but otherwise in good condition – seal using Sissons Alkali Resisting Primer. Allow to dry and refinish with Sissons Non-Drip Ceiling White or any Sissons Flat Emulsion paint.
WETTING DOWN (LOSS IN VISCOSITY)	An Emulsion paint appears very thin in the can and may have a foul odour.	Contamination causing spoilage. Inadequate protection with preservatives at time of manufacture.	Can should be properly sealed. Mix with only clean water. Do not use dirty brush, spatula etc. If paint is too thin and foul smelling then it must be destroyed.
WRINKLING	Paint film folds in patches where a heavy coat is applied or in runs or sags.	Paint film to thick. Application of a second coat before first has dried properly.	Improve application technique. Follow instructions of manufacturer. Wrinkled areas must be stripped or sanded off before repainting.

SAFETY AND PIPING COLOUR MARKING CODE

In different countries laws are enacted that industries / factories colour mark physical hazards, safety equipment location, fire equipment, pipelines etc. The colour codes are adopted from different colour standards e.g. Administration 29 CFR 1910. adopted from ANSI Z 535.1-2011 (BS 1710).

We in Trinidad & Tobago have adopted the British Standard System to Colour code Pipelines & hazardous areas in our factories.

When colour marking codes are adopted the users must bear in mind that these are for identification purpose only and in no way should supercede the elimination of hazardous conditions. Also where colour numbers are given form the British Standard Shade cards, the exact shade in not critical so long as the general policy is followed uniformly throughout the plant.

SAFETY COLOURS (THE SAFETY COLOUR, MUST BE IN ITS ACTUAL COLOUR: REFER TO SISSONS COLOUR CHARTS)

PIPE CONTENTS	IDENTIFICATION ITEM	BS4800 COLOUR REF	SISSONS EQUIVALENT	SHADE
Safety Red	Fire Extinguishers Fire Hydrants Post Office Red Fire hose location Fire Alarm boxes Fire Sirens To denote Danger	04E53	Super Gloss Post Office Red	
Safety Yellow	Where caution is needed Low Beams Railings Dead ends Protruding Parts To denote Caution	08E51	Sissons Industrial Enamel Hazard Yellow	
Auxiliary Blue	Pipes carrying fresh water, potable or non-potable	18E53	Sissons Super Gloss Regatta Blue	

SAFETY AND PIPING COLOUR MARKING CODE

INTRODUCTION:

Lines inside buildings can be painted the same colour as their adjacent surface but to be identified colour bands and legends on areas adjacent to values, couplings and where pipes pass through walls. Direction of liquid flow should be identified with arrows.

PIPE CONTENTS	IDENTIFICATION COLOURS	BS4800 COLOUR REF	SISSONS EQUIVALENT	SHADE
Water	Green	12D45	Super Gloss Buckingham Green	
Steam	Silver Grey	10A03	Sissons Dove Grey	
Gases (except Air)	Yellow Ochre	08C35	Available from Sissons Tint System	
Oils – Mineral, Vegetable, Animal	Brown	06C39	Available from Sissons Tint System	
Air	Light Blue	20E51	Sissons Super Gloss Caribbean Blue	
Acids & Alkalis	Violet	22C37	Available from Sissons Tint System	
Electrical	Orange	06E51	Available from Sissons Tint System	
Fluids (other than above)	Black	Black	Black	